

ART. I. PSEUDOCYLINDRODON, A NEW RODENT GENUS
FROM THE PIPESTONE SPRINGS OLIGOCENE
OF MONTANA.

BY J. J. BURKE.

In the course of study of the fossil rodent collections of the Carnegie Museum, the writer, through the kindness of Mr. Charles Gilmore of the United States National Museum, and of Dr. Walter Granger, of the American Museum of Natural History, has been privileged to examine the extensive rodent collections preserved in the latter two institutions, and to describe the material which is the subject of the present paper. The illustrations for this article are from drawings by Mr. Sydney Prentice.

Order **SIMPLICIDENTATA** Lilljeborg

Family **ISCHYROMYIDÆ** Alston

Genus **PSEUDOCYLINDRODON** gen. nov.

Genotype: **Pseudocylindrodon neglectus** sp. nov.

1903. *Cylindrodon fontis* Matthew, Bull. Amer. Mus. Nat. Hist., Vol. XIX, Art. VI, fig. 8A (p. 212).

Holotype: Left ramus of mandible, U. S. N. M. 13758.

Paratype: Left ramus of mandible, U. S. N. M. 13757.

Referred specimens: Left ramus of mandible with DP₄ M₁₋₂, A. M. N. H. 9644; right ramus of mandible with P₄ and M₁, U. S. N. M. 13759; part of left ramus of mandible with P₄, A. M. N. H. 9646.

Horizon: Pipestone Springs Oligocene.

Locality: Pipestone Springs, Jefferson County, Montana.

Diagnosis: Cheek teeth with lower crowns than those of *Cylindrodon*, and with shallower basins, the floors of which are visible in crown view. P₄ with trigonid more elevated than in *Cylindrodon* and trigonid cusps less widely separated, protolophid absent or merely indicated, external intermediate cuspule present but hypolophid absent. Inferior molars with central basins broader, anterior and posterior basins narrower, antero-posteriorly, than in *Cylindrodon*; internal intermediate cuspules prominent, their flanks fused with entoconids and

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metaconids, blocking outlets of central basins; posterior basins converted into fossettes, their outlets dammed due to complete fusion of entoconids and hypolophulid crests. Talonids of molars, except in M_3 , wider, relative to trigonids, than in *Cylindrodon*; hypoconids showing some hypertrophy, consisting of strong rounded buttresses, jutting externally (except in M_3) and not attenuate as in *Cylindrodon*. DP_4 relatively smaller than in *Cylindrodon*. Mental foramina two, placed posterior to diastema.

The present species has been confused with *Cylindrodon fontis* Douglass, from which, as the diagnosis indicates, it is quite distinct. An occlusal view of the dentition of A. M. N. H. 9644, was figured by Matthew¹ as an example of an early stage of tooth wear in *Cylindrodon fontis* Douglass. In Matthew's figure (fig. 8A) however, M_{1-2} differ from the molars of *Cylindrodon fontis* Douglass, illustrated in the same drawing, in showing robust, rounded hypoconid buttresses, broad central valleys and hypolophulid crests fused with entoconids—characteristic features of *Pseudocylindrodon neglectus* m. My figures of the holotype mandibular ramus (figure 1 of the present paper) bring out more clearly the details of the pattern, which may be compared with that of a specimen of *Cylindrodon fontis* Douglass, A. M. N. H. 9638, shown in figure 2. The discrepancy in crown height

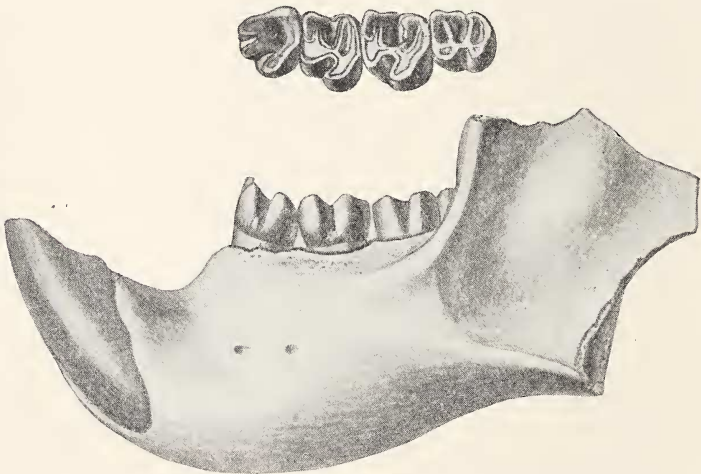


FIG. 1. *Pseudocylindrodon neglectus* Burke, holotype, U. S. N. M. 13758. External view of mandibular ramus and occlusal view of cheek teeth, x 5.

¹Matthew, W. D., "The Fauna of the Titanotherium Beds of Montana." Bull. Amer. Mus. Nat. Hist., Vol. XIX, Art. VI, fig. 8a (p. 212), 1903.

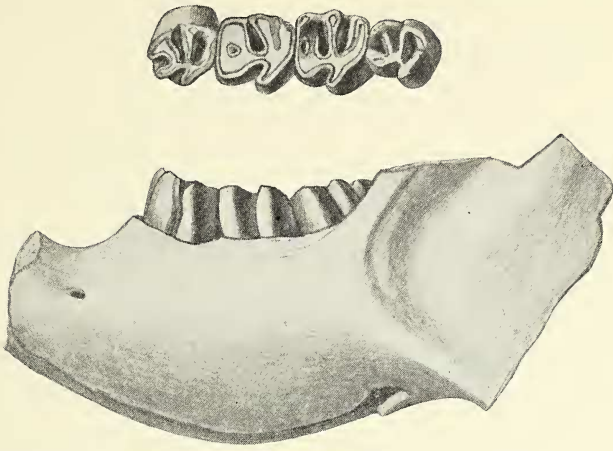


FIG. 2. *Cylindrodon fontis* Douglass, referred specimen, A. M. N. H. 9638. External view of mandibular ramus and occlusal view of cheek teeth, x 5.

between *Pseudocylindrodon neglectus* m. and *Cylindrodon fontis* Douglass is quite evident in these figures.

In some respects, *Pseudocylindrodon* is intermediate between *Cylindrodon* and *Ardynomys*. The cheek teeth are nearer those of *Ardynomys* in crown height and their tendency toward hypertrophy of the hypoconid region; the tooth pattern in general shows similarities. The incisor of *Pseudocylindrodon* is not flattened, however, as it is in *Ardynomys*; the central basins of the cheek teeth are deeper in *Pseudocylindrodon*, have rounded floors, and are closed internally by the upgrown intermediate cuspule. The jaw of *Ardynomys* is deeper anteriorly than that of *Pseudocylindrodon*, the posterior basins of the cheek teeth of *Ardynomys* have internal exits, and the protolophids are less transverse than in *Pseudocylindrodon*.

Cylindrodon, *Pseudocylindrodon*, and *Ardynomys*, are probably Oligocene representatives of the stock of rodents typified in the Bridger Eocene by the forms which Troxell² has included under *Tillomys*. In North America this line appears to culminate in the lower Oligocene, at which time it is also represented by *Ardynomys* in Asia. Whether or not *Tsaganomys* and *Cyclomytus* of the Upper Oligocene of Mongolia are also derivatives of this stock is not determinable without further

²Troxell, Edward L., "The Eocene Rodents *Sciuravus* and *Tillomys*." Amer. Jour. Sci., Vol. 5, pp. 387-396, 1923.

study, although there are some interesting points of resemblance between the latter genera and *Ardynomys*.

	MEASUREMENTS	
	Holotype U. S. N. M. 13758	Paratype U. S. N. M. 13757
Inferior I antero-posterior.....	2.3 mm.	2.2 mm.
Inferior I transverse.....	1.7 mm.	1.7 mm.
P ₄ antero-posterior.....	1.6 mm.	1.7 mm.
P ₄ transverse.....	1.8 mm.	1.8 mm.
M ₁ antero-posterior.....	1.7 mm.	1.7 mm.
M ₁ transverse.....	2.15 mm.	2.15 mm.
M ₂ antero-posterior.....	1.7 mm.	1.8 mm.
M ₂ transverse.....	2.3 mm.	2.15 mm.
M ₃ antero-posterior.....	1.8 mm.	1.9 mm.
M ₃ transverse.....	2.0 mm.	2.3 mm.
P ₄ -M ₃ , greatest length.....	6.5 mm.	6.8 mm.
M ₁₋₃ , greatest length.....	5.5 mm.	5.4 mm.
Length of diastema between inferior I and P ₄	3.5 mm.	3.4 mm.
Depth of ramus under M ₁	5.7 mm.	5.5 mm.